



THE ATMOSPHERIC RESERVOIR

Examining the Atmosphere and Atmospheric Resource Management

Snow Reporting Comes to ARBCON

By Daniel Brothers

The Atmospheric Resource Board (ARB) has operated a statewide, volunteer rain gauge network for more than 30 years. The ARB Cooperative Observer Network (ARBCON) has reported rainfall during the months of April through September for the purposes of assessing growing season moisture. Starting in October, the ARB plans to expand ARBCON to include snowfall reporting, thus making the network operational on a year-round basis.

It has become clear over the last few years that there is an increasing need for accurate snowfall-related data in North Dakota. Having an accurate picture of the snowpack throughout the winter can help delineate the locations and severity of spring flooding. Measuring the amount of liquid water contained within the snowpack at a given time can tell hydrologists how much potential runoff may result when the spring melt occurs.

The same snowpack data can indicate to hydrologists the amount of water available to fill reservoirs and recharge aquifers. All of this data can be factored in to the appropriation of North Dakota's water resources for wells, irrigation, and commercial use. In addition, this data will help aid in the assessment of drought throughout the state.

Adding daily snowfall and water



equivalent values will enable the ARB to produce complete 12-month annual precipitation products in addition to the current monthly and growing season (April-September) products. It will also allow for the inclusion of spring and early fall snow events that are not included in any of the current products from ARBCON.

To facilitate the change to year-round reporting, any volunteers who choose to report snow will be provided with new four-inch rain gauges. These are the same gauges used by both National Weather Service volunteers and the volunteers of the Community Collaborative Rain, Hail and Snow Network (CoCoRaHS). These gauges withstand the freezing temperatures in North Dakota better than the current ARBCON gauges and are more suitable for snow measurements.

The ARB is hoping to receive the assistance of close to

200 volunteers for reporting snowfall related data starting in October. Information from the ARBCON database is available on the Internet at www.swc.nd.gov/arb. Monthly and seasonal rainfall maps from 1977 through 2010 are available, as well as daily rain and hail data. You can also contact the ARB office at 1-800-654-5981 for information or questions about ARBCON. If you would like to become a volunteer observer you can call the above

number or e-mail us at dabrothers@nd.gov. The information collected by ARBCON is used by many local, state, and federal government offices, as well as private companies, for a variety of purposes. Universities have used the data for a number of research applications and students at all levels from elementary school through college have used this rainfall data for assorted projects and reports.

Thank you to all the observers who have helped to make ARBCON a successful program. We look forward to many more years of cooperation with the many volunteers throughout the state.

Photo courtesy of KFVR.

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